DOCUMENT RESUME

ED 043 750 24 VT 011 701

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TITLE Occupational Status Changes for Blacks and Nonblacks During the First Ten Years of Occupational Experience.
INSTITUTION Johns Hopkins Univ., Baltimore, Md. Center for the Study of Social Organization of Schools.
SPONS AGENCY Office of Economic Opportunity, Washington, D.C.; Office of Education (DHEW), Washington, D.C. Bureau of Research.
REPORT NO R-76
BUREAU NO BR-6-1610
PUB DATE Aug 70
GRANT OEG-2-7-061610-0207
NOTE 66p.

EDRS PRICE EDRS Price MF-$0.50 HC-$3.40
DESCRIPTORS *Academic Achievement, Caucasians, Comparative Analysis, Educational Benefits, *Educational Status Comparison, Negro Employment, *Negroes, *Promotion (Occupational), Racial Discrimination, *Success Factors

ABSTRACT

Retrospective life history data are used in this analysis of the mechanisms which lead to differential levels of occupational success. The paper is based on data collected from a cohort of black men and a cohort of nonblack men, aged 30-39 in 1968. The measure of occupational achievement used throughout is the occupational status of the first job held after last leaving fulltime education and the status of the job held 10 years later. The analysis shows that educational level far outweighs other background characteristics in determining the occupational status of the first job. Partly due to occupational discrimination, the value of education in terms of the status it brings is about twice as great for nonblacks as for blacks. This difference in the effects of education, combined with lower educational attainment by blacks, results in considerably lower status levels. After 10 years, the status of nonblacks showed an increase of 30.8 percent, whereas that of blacks increased 15.9 percent. The study found that roughly half of the difference in status change was due to original levels of resources and the remainder was due to the differential efficacy of these resources. The efficacy of intervening events such as on-the-job training showed no significant differences between blacks and nonblacks. (Author/BH)

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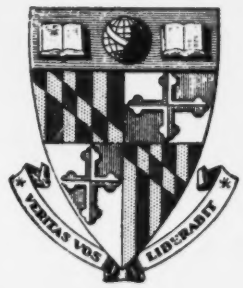

THE JOHNS HOPKINS UNIVERSITY
THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

REPORT No. 76

OCCUPATIONAL STATUS CHANGES FOR BLACKS AND NONBLACKS DURING THE FIRST TEN YEARS OF OCCUPATIONAL EXPERIENCE

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AUGUST, 1970

VT011701

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Published by the Center for the Study of Social Organization of Schools, supported in part as a research and development center by funds from the United States Office of Education, Department of Health, Education and Welfare. The research reported herein was supported through Grant No. OEG-2-7-061610-0207. The analysis was performed partially with support from the Office of Economic Opportunity through contract B 99-4885. The opinions expressed do not necessarily reflect the positions or policies of either supporting agency and no official endorsement should be inferred.

Acknowledgement

This paper is part of a research program in Social Accounting initiated by Peter H.Rossi and James S. Coleman. We would like to express our appreciation to Page Clark and Keith L.Smith for their assistance in data processing. The secretarial help of Joan S. Cwi and Phyllis K. Wilson was invaluable.

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1.0 Introduction

The recent work by Blau and Duncan (1967) found a fairly strong relationship (r = .541) between the status of the first full-time occupation held by a male and the status of his occupation at the time he was interviewed for their study. The purpose of the present analysis is to explore this relationship by focussing on intervening labor-force experience as well as events in other realms of the individual's life. The practical value of such a research undertaking can obviously be great. Persons who start their occupational careers at the same point end up at quite different levels. This fact makes it important to unravel the mechanisms which lead to success for some and failure for others.

In addition, it is important to focus on groups in the society whose occupational status is especially problematic. The current disadvantaged position of Negro Americans in this country is an undisputed fact. Nowhere is this position more evident than by an examination of the distribution of blacks in the occupational structure. In 1960, for example, 3.3% of black males in the labor-force were classified as professionals, but 9.9% of the whites were in this category. There were 10.2% of the whites in managerial professions, but only 1.8% of blacks. At the other extreme of the distribution, 17.6% of black workers were laborers, while only 5.5% of whites were laborers.

The disadvantaged position of blacks in the occupational structure is in part a consequence of their lack of resources upon entering the

labor market. The differential distribution of education, for example, accounts for part of the above discrepancy. At the same time, discrimination in job markets means that even with the same starting resources, blacks would end up with different occupational positions. The emphasis on occupations is apparent, for the returns to an individual from his occupational position determine, to a large extent, his life style and that of his family. Among the more important dimensions of an occupation are its income and status. These are important since they facilitate access to goods and services available in the society. The present analysis will focus on one of these dimensions, occupational status, or prestige.[1]

At some point, generally in the late teens, individuals enter the labor market and occupy occupational roles for most of their lives. The different ways in which individuals enter the labor market and differences in the entry process in different racial groups have been discussed elsewhere (Ornstein and Rossi, 1970). Given a specific entry point and an observation on the individuals at some point in the future, it becomes important to see whether in fact later status could have been predicted from status at entry point.

As the later analysis indicates, we find a correlation of .506 for nonblacks and .395 for blacks between the occupational status of the first job and the occupational status of the job ten years later.[2] Thus later job status cannot be fully predicted from initial status. The task before us, therefore, is to determine what factors intervene between the two time points and account for deviations from this prediction.

Our approach to the study of an individual's occupational achievement is to consider a socioeconomic life cycle. Thus, a number of distinct stages can be seen through which individuals pass: socialization and early childhood in one's family, a portion of time spent in formal schooling and participation in the labor force. The actual length of these stages is subject to wide variation; in addition, many other events intervene and modify this simple model. For example, military service can occur during schooling, follow immediately afterwards or interrupt a career. In addition, respondents may form families of their own during either of the second two stages. Additional schooling, residential and geographical relocation, changes in marital status, family formation, and many other factors can impinge upon, alter or modify participation in the labor force as well as one's status in it. The present analysis, then, seeks to examine the ways in which these types of events and experience intervene, and possibly mitigate for or against, occupational achievement.

Blau and Duncan define as the first job a full-time job which the respondent had after he left school. They note the problem of temporal ambiguity with respect to this ordering: in their data, they observe some inconsistencies between the age individuals report for this job and the number of grades they report completing. In order to assure some comparability with that research, the present paper uses a definition of first full-time job identical to that used by Blau and Duncan;[3] i.e., the first full-time job is defined as the job the respondent held after

he was last in full-time education. Given the nature of the life history data used in this analysis, we can determine precisely the job that fits this definition.[4]

While a priori reasons exist for this definition of first job, a number of alternatives are available for what the relevant present job should be. First, one can consider the job held at the time of interview in 1968. While such a definition is appropriate in describing the most recent occupational distribution of the sample, it may represent for some individuals a time point twenty years after their first job, for others many fewer.[5] Alternatively, one can consider the job held at a specific age. This approach also has the problem that the amount of labor-force experience of the respondents is not fixed. In the present study, selection of an age beyond 30, in addition, introduces problems of sample attrition. As a result, the investigation would suffer from a considerable loss of information. Still a third approach to a terminal point is the job held a fixed number of years after his first job. This is the approach used here. The terminal job is defined as the job held ten years after the first job.

As with a fixed-age comparison bench-mark, this definition also leads to some loss of information. Most important, a number of individuals obtain their first job sufficiently late in their lives so that ten years of information for them does not exist in the data. Another set of excluded individuals are those who enter relatively early but are among the younger respondents so that ten years of information does not exist for

them. This means that the sample size is reduced, omitting those men who enter the labor force at a later age, or are among the youngest respondents. The sample consequently is biased against persons who left school late, containing a smaller proportion of such persons than the cohort as a whole. This bias was considered preferable to the biases introduced by either of the other two alternatives.

One caveat is in order. The present analysis is based on retrospective occupational histories collected from a single cohort. As such, this data base is preferable to a cross-sectional study. Nevertheless, the cohort represents a particular historical population, and its experiences are a joint result of the conditions of that historical period and general factors associated with given experiences but independent of a historical period. Since only one cohort is present in this work, the resulting description is valid only for that historical group. This is especially important to remember since it may be that in the past few years, occupational opportunities for blacks in the United States have changed in ways that would make the description invalid for a cohort about to enter the labor force or one whose entrance occurred in the past few years. Only further research will show to what extent the generalizability of analysis is invalid due to the particular historical circumstances of the cohort dealt with here.

The distributions in Table 1 show, for both black and nonblack men, the age at which they left full-time education for the last time.[6] As is evident, nonblacks tend to leave full-time education later than do

Table 1. Age at Last Leaving Full-Time Education for Nonblack and Black Men

Age (in Years)	Nonblack	Black
	Percent	
Before 14	4.5	6.9
14-15.9	12.1	20.1
16-17.9	35.8	37.0
18-19.9	27.2	25.8
20-21.9	7.9	7.1
22-23.9	5.7	1.9
24-25.9	4.7	0.9
26-27.9	1.8	0.2
28-29.9	0.3	0.2
	100.0	100.1
Total Cases	662	592

blacks, and leave with more education than the average black. However, for the same level of educational attainment, the average black last leaves full-time education at a slightly later age than does the average nonblack, as Table 2 shows.

Having left full-time education for the last time, what were the types of jobs into which these men flowed? The left-hand columns of Table 3 show the occupational distribution, by Census categories, of those first jobs as well as the mean occupational status for the two groups. The remaining columns of the table show the occupational distributions and mean status of the jobs held ten years later.

Inspection of these distributions indicates that, during a decade, significant changes have occurred. Comparison of mean status levels show that whereas the blacks and nonblacks were 5.59 status points apart initially, by the end of the decade the difference had widened to 10.95 points. This difference can be illustrated by some examples: the initial status difference between blacks and nonblacks is that between paperhangers and painters; the terminal status difference is that between deliverymen and telephone linemen.

Table 2. Mean Age at Last Leaving Full-Time Education by Educational Attainment Levels, for Nonblack and Black Men.

Educational Attainment	Nonblack			Black		
	Age (Years)			Age (Years)		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Less than four years of schooling	11.8	3.2	9	12.7	2.8	30
Elementary, four to eight years	15.1	1.3	102	15.4	1.5	131
High school, one to three years	16.9	1.3	138	17.1	1.3	218
High School graduate	18.3	1.2	274	18.4	1.3	160
College, one to three years	21.2	2.6	64	20.8	2.7	35
College, four years or more	23.6	2.0	75	22.2	1.5	18
Total Cases =			662			592

Table 3. Occupational Distributions of First Full-Time Jobs, Jobs Ten Years Later, and Mean Occupational Status for Both Jobs, for Nonblack and Black Men

Occupational Group	First Job		Later Job	
	Nonblack	Black	Nonblack	Black
	Percent			
Professional, Technical	7.88	2.70	13.90	3.89
Managers, Proprietors, and Officials, Exc. Farm	2.88	.34	12.99	2.70
Clerical and Sales	15.15	8.28	12.39	10.47
Craftsmen	11.21	6.25	21.30	11.49
Operatives	24.85	22.13	23.41	31.08
Service Workers	2.73	15.20	2.72	11.66
Laborers, Exc. Farm	18.48	26.18	5.59	23.65
Farmers and Farm Laborers	16.82	18.92	7.70	5.07
	100.0	100.0	100.0	100.0
Mean Occupational Status	29.89	24.30	39.10	28.15
Case Bases	662	592	662	592

1.1 Framework and Method of Analysis

The preceding discussion has implied a conceptual framework for the analysis, i.e., a life cycle approach, examining a fixed interval of time. Figure 1 contains a diagrammatic arrangement of the variables and events which will subsequently be discussed in the analysis. The classes of variables in this Figure can be summarized as follows:

(A) Background variables characterizing the respondent's family of orientation;

(B) Variables, including educational attainment, that characterize the individual prior to his first full-time job (defined as described earlier). Some of these, such as illness, military service or periods in jail may occur after full-time education is completed;

(C) First full-time job after last full-time education;

(D) Factors which intervene in the ten years between the first full-time job, as defined and the later job, as defined. These factors include events in the occupational, residential, marital and educational spheres.

At the far right of Figure 1 is the end point of the analysis: respondent's occupational status. The arrow marked "10 years" leads from the occupational status of the first full-time job to the later job. It is around these two variables, measured one decade apart, that the remainder of the analysis is organized. The five arrows, marked 6,7,8,9, and 10, represent clusters of events which occur during the decade of interest and which can be assumed to have some impact on the status of the later occupation. Our concern is with the durations of various states and whether or not these events, in fact, occurred in the respondent's life. For example, our interest is in the length of time a respondent was

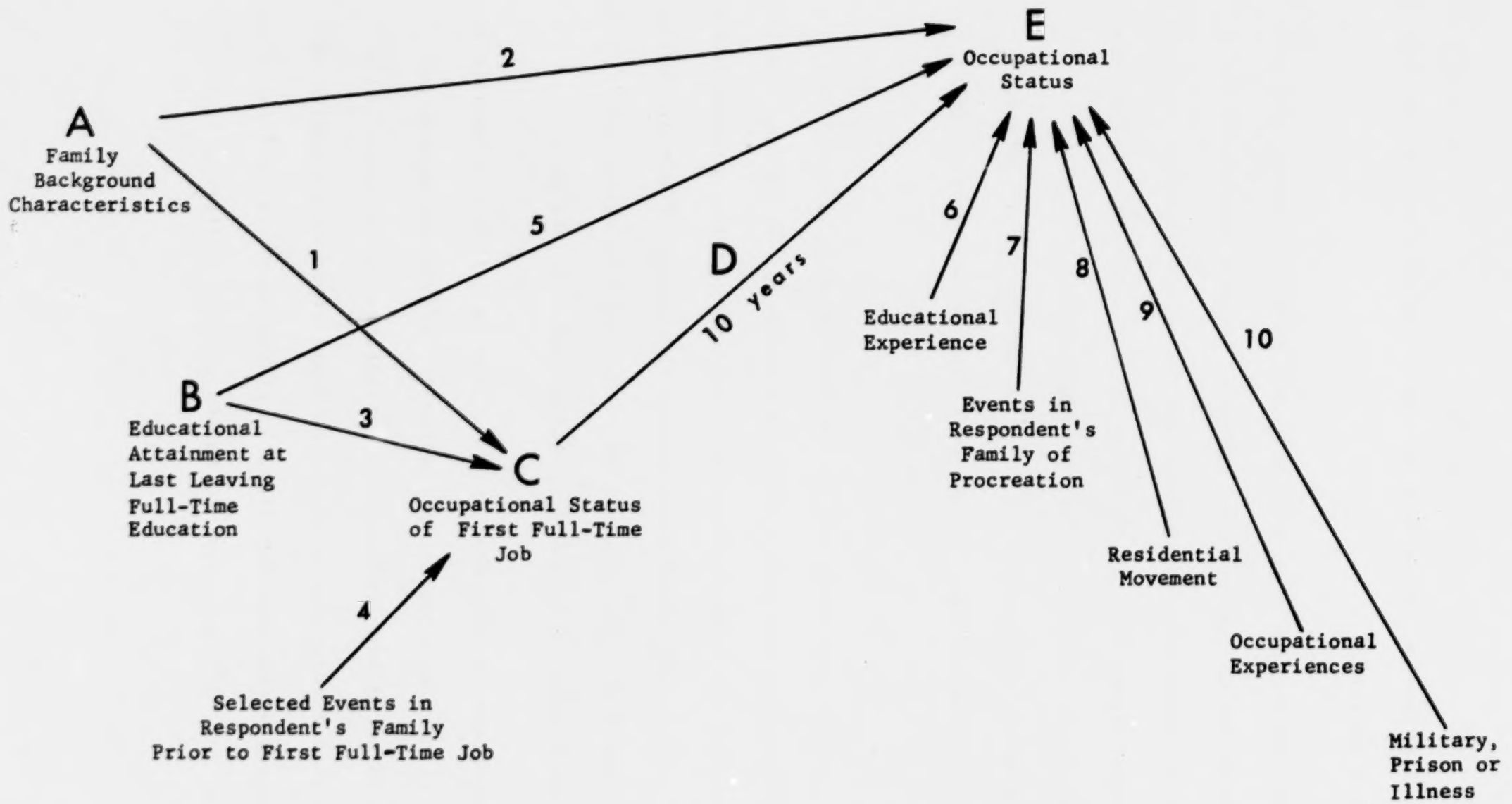

Figure 1. Schematic Representation of the Analysis of Occupational Status Ten Years After Men Leave Full-Time Education for the Last Time

married during the decade, without a consideration of the precise year in which he got married.

Preceding the occupational status of the first full-time job are three additional arrows (marked 3,4, and 5). Arrow 5 represents the direct effect of educational attainment on later occupational status. Arrows 3 and 4 show the direct effects of education and other selected experiences on the status of the initial job. The ordering of the cluster of selected experiences in relation to the end of full-time education is also unspecified, except that they occur prior to the first job.

Finally, at the left-most end of the diagram we have a cluster of variables representing the background characteristics of the respondent. Arrow 1 represents the direct effect of family background characteristics on first job status, and arrow 2 represents the direct effect of family background in the later job, apart from its effects on educational attainment and on the events represented by arrows 4,6,7,8, and 9.

It is important to note that this diagram is merely a schematic representation of the skeleton of the analysis. Additional arrows and variables could be added. For example, educational attainment can be assumed to have a direct effect on events represented by variables of type D; or family background may directly affect these variables. Those relations, however, are not examined in the present analysis.

In the analysis, we will be studying two major kinds of effects:

(1) effects on initial occupational status, i.e. the first full-time job after last full-time education; and

(2) effects on the change in occupational status over the ten-year period following the beginning of the first job.

For the first of these two effects, only variables of types (A) and (B) are relevant. For the second of the two, variables of types (C) and (D) may be important as well. In examining the first of these effects, there will necessarily be some overlap with the study of entry into the labor force described in another report (Ornstein and Rossi, 1970), just as that report must necessarily pay some attention to changes in job status. In this report, the study of the effects of variables (A) and (B) on initial occupational status will be confined to preparing the groundwork for examining changes in occupational status.

Thus the analysis will focus on two dependent variables: first, the occupational status of the first job; and second, the occupational status of the second job. The principal method of analysis will be linear regression analysis using these two dependent variables, and using variables of types (A) and (B) as independent variables for the first, and variables of types (A), (B), (C), and (D) as independent variables for the second.

One methodological clarification is necessary. The effects on change in occupational status can be examined in either of two equivalent ways: by taking as the dependent variable the change in status, Δy, as described above, making certain to include as an independent variable the initial status,

y_0; or taking as the dependent variable the status of the terminal job, again using as an independent variable the initial status, y_0. The regression coefficients obtained by these two analyses are equal within the limits of rounding errors--except for the coefficient on y_0. The coefficient on y_0 when Δy is used as the dependent variable, is the coefficient when y_1 is used as the dependent variable minus 1.0.[7]

It is appropriate here to say a word about the causal status of the various variables in the analysis. One consideration to be kept in mind is that some of the variables may represent either an action on the part of the individual himself or the influence of events over which he has no control. While individuals cannot select the family into which they are born or their race, events such as part-time education or birth control practice are events over which the individual asserts some control. Other variables, while not necessarily reflecting an affirmative action, may also be proxies for different types of ability. For example, having military experience indicates an ability level above a certain minimum. Thus, an apparent effect of military experience may reflect an effect of ability and not of the military experience itself.

2.0 Effects of Characteristics and Activities on Occupational Status of First Job

A number of characteristics of family background and a number of events prior to first job were measured in accord with the analytic scheme described above. These variables are listed in Table 4, together with their mean values and their zero-order correlations with the status of

Table 4. Means of Characteristics of Family of Orientation and Activities Prior to First Job, and Zero-Order Correlations with Occupational Status of First Job

Characteristics and Activities	Means		Zero-Order Correlations to Status of First Job	
	Nonblack	Black	Nonblack	Black
Father's Occupational Status	35.44	27.78	.242	.237
Father's Educational Attainment	2.28	1.53	.227	.242
Mother's Educational Attainment	2.74	2.00	.248	.227
Educational Attainment at Time of First Job, Months	3.93	3.06	.512	.398
First Job Obtained Through Family or Friends (Yes/No)	.51	.58	-.248	-.138
Military Service Prior to First Job (Yes/No)	.14	.12	.130	.253
Marriage Prior to First Job (Yes/No)	.15	.10	.263	.144
Birth Control Practice Prior to First Job (Yes/No)	.06	.02	.181	.136
Wife's Participation in Labor Force Prior to First Job, Months	.89	.39	.251	.158
Wife's Education at First Job*	4.58	4.44	.248	.495
Religion (Catholic or non-Catholic)	.28	.08	-.005	.013
Number of Illnesses Reported Prior to First Job	.63	.17	-.005	.158
Time Spent in Jail Prior to First Job, Months	.71	0	-.011	0

*Nonblack based on 75 cases; black on 45 cases.

first job. The general pattern of relationships is similar for nonblacks and blacks, but some definite differences exist. Marriage prior to first job, practice of birth control prior to first job, and wife's participation in the labor force prior to his first job are more highly related to status of nonblacks' first job than blacks'. All of these are in part surrogates for age at first job (e.g., the correlation between marriage prior to first job and age at which first job occurs is .510 for nonblacks and .423 for blacks), and may be related to the pattern of wife's working while husband finishes higher education, a pattern more prevalent among nonblacks than blacks. A different pattern among blacks is suggested by the considerably higher correlation among blacks than among nonblacks of occupational status with wife's education, among those who were married. The status of first job is more highly correlated with wife's educational attainment among those blacks that were married at time of first job than with <u>own</u> educational attainment.[8] (This should, however, be interpreted with caution, since only about 8% of the blacks were married at this point.) There appears to be a pattern among blacks of somewhat higher relationships between wife's own educational attainment and that of her husband than is true among nonblacks. Besides these higher correlations shown above, wife's educational level is slightly more highly correlated to that of husband at both points in time for blacks than for nonblacks.[9] This is in spite of generally lower correlations among variables for blacks than for nonblacks.

These observations suggest a pattern in which wife's education is a more important part of the family social status among blacks than nonblacks.

The lower correlation among nonblacks suggests that the wife's education is less important and thus needs less to correspond to husband's education and status.[10] Subsequent analysis will shed more light on this difference; at this point, the data are merely suggestive of a stronger role of wife's education in the family status for blacks than for nonblacks.

Another difference between blacks and nonblacks is the greater relation of prior military experience to blacks' first-job status than to nonblacks'. For both groups, the relationship is positive; but it is about twice as high for blacks as for nonblacks.

Finally, for both blacks and nonblacks, those jobs obtained through family connections tend to be of lower status than those obtained through more universal means. This relationship is more true for nonblacks (correlation of -.248 compared to -.138). The negative relationship points to the fact that job openings that are filled through family and friends, in local job markets, tend to be lower-status, while with some exceptions, the higher status jobs are those in which job markets are less locally restricted and less family-related.

A better idea of the processes through which the status of first job is determined, and the differences in these processes for blacks and nonblacks, may be obtained through examining the coefficients from a regression of first-job status on some of these factors. The regression coefficients are shown in Table 5. Several variables have been omitted from the variables listed in Table 4. Because they are relevant to only

Table 5. Regression Coefficients and t-Values from Regression of Background Characteristics on Occupational Status of First Job, for Nonblack and Black Men

Independent Variables	Nonblack		Black	
	Regression Coefficient	t-value	Regression Coefficient	t-value
Educational Attainment	3.42	(10.9)	1.87	(7.6)
Military Service Before First Job	2.62	(2.1)	4.67	(4.3)
Father's Occupational Status	.079	(2.0)	.098	(3.2)
Father's Educational Attainment	-.103	(0.4)	.488	(1.9)
Mother's Educational Attainment	.188	(0.6)	-.314	(1.1)
Marriage Before First Job	3.18	(2.4)	.444	(0.4)
R^2=	.281		.215	

a small fraction of the respondents, variables referring to wife's education and occupation are deleted; and because the relationships are low, religion, illnesses, and time spent in jail are deleted.[11]

These relationships show several things: first, for both blacks and nonblacks, far outweighing all else is the importance of the respondent's educational attainment. Second, it is more effective for job status for nonblacks than for blacks. The increment of occupational status associated with a unit increase in educational attainment is almost twice as great for nonblacks as for blacks. Thus blacks suffer educationally in two ways: first, their level of educational attainment is lower; and second, a unit increase in educational attainment shows only a little over half the benefits in occupational status (1.9 to 3.4) that the same increment in education brings for nonblacks. This means that the increase from high school graduate to some college for nonblacks means an occupation about 3.4 higher in status (for example, the difference between radio operator and food store manager), but for blacks, the same educational gain means only an increase of about 1.8 points in status (the difference between clerk and building inspector).

A number of reasons might be suggested as to why the impact of education is so different for the two groups. First, the quality of education available to the two groups has been quite different. Thus, a similar level of education, but obtained either in different parts of the United States or in different (and inferior) schools, can have a different meaning for blacks.[12]

In addition to differences in the quality of schooling, blacks and nonblacks can be said to obtain their jobs in quite different labor markets and be subject to different kinds of discrimination. The types of jobs, in some parts of the country, to which blacks have access may be quite different than those available to nonblacks; in addition, within similar occupations, blacks may be the incumbents of less desirable jobs.[13]

Most of the effect of parental background takes place through educational attainment, rather than apart from it. However, both for blacks and nonblacks, the occupational status of the father shows some independent effect (an increase of 10 points in father's occupational status means an increase of about 0.8 points for nonblacks or 1.0 points for blacks, respectively). When first job is obtained through the family, it is easy to see just how this independent effect of father's occupational status can exert itself, since the job obtained through the family will often be related to the father's. Mother's education shows no effect on son's occupational status independent of these other variables. Father's educational attainment shows a non-negligible regression coefficient for blacks, but a negligible one for nonblacks. It is clear that there is not a large direct effect of parents' education on occupational status when father's occupational status and son's education are taken into account; most of their effect is indirect, through son's education, as other analyses would show.[14]

Military service before the first job is associated with a higher status job when these other variables are controlled, and the relationship is higher for blacks than for nonblacks. The size of the coefficients

implies that, all other factors being equal, military service leads to a first job that is 2.6 points higher in occupational status for nonblacks, and 4.7 points higher for blacks. These increments are equivalent to about a difference between hospital attendants and drugstore managers for blacks and hospital attendants and telephone linemen for nonblacks. However, only 12% of the blacks and 14% of the nonblacks had experienced military service before the first job.

The greater benefit of military experience prior to first job for blacks than for nonblacks may be the result of at least two possible causes: first, occupational experience in the military for blacks may be more readily transferable to the civilian sector than occupational experience for nonblacks; second, acceptance by the military is more selective of abilities related to occupational performance among blacks. In addition, in looking for an evaluative yardstick, employers may use the military as such a yardstick for blacks more than for nonblacks.

Marriage before the first job shows a positive effect for nonblacks (a status difference of 3.2 points), and a negligible effect for blacks. The difference is a large one, and appears to be larger than could be attributed to chance alone. It may be that marriage before completion of education for nonblacks and military service for blacks serve similar functions: to allow a longer preparatory period before the first job, thus allowing the new labor force entrant to begin at a higher point. This, however, is speculative: the data show simply that marriage before first job and military service before first job are associated with increments in first job status for nonblacks and blacks respectively.

One variable, finding a first job through family and friends, was omitted from this analysis, to allow comparability with the analysis of the status of the later job. This variable shows a non-negligible zero-order correlation (negative in sign) with status of first job. In a regression equation like that described above, with the six background characteristics, this variable of obtaining a first job through family vs. otherwise was introduced. (51.7% of the nonblacks and 58.0% of the blacks obtained their first job through family or friends). The regression coefficients for the other variables are altered slightly when this variable is added but not enough to modify the conclusions given above. What does show up, however, is a strong negative effect for nonblacks of obtaining a first job in this way, and a very small (and perhaps due to chance) negative effect for blacks. The regression coefficients were -3.37 (t-value of 3.8) for nonblacks, and -.52 (t-value of 0.7) for blacks.

This means that nonblacks who obtained a first job via their families obtained jobs about 3.4 status points lower than nonblacks with similar values on other background characteristics who obtained a job through more universalistic job markets--about the same as being one notch lower in education (from some college to high school, or from college graduate to some college). For blacks, however, the way in which first job was obtained makes a small status difference (0.5 points), if any.

It may be that nonblacks have alternative non-local job markets for their skills; if they use those non-local markets, rather than the local opportunities which their family and friends can help them obtain, they

obtain higher-status jobs. For blacks at the point of first job, the alternative job opportunities very likely remain local and are largely blue-collar and low status.

2.1 What Difference Do Background Resources Make and What Difference Do Processes Make In Initial Occupational Status?

The total difference in occupational status between blacks and nonblacks first noted in Table 3 reflects both the different background resources held by blacks and nonblacks, and the differential effects of these background resources on occupational status, for blacks and nonblacks. The differential effects will be referred to as the "efficacy" of these background resources.

The mean difference in the level of education between nonblacks and blacks is 0.87;[15] part of the difference between nonblacks and blacks in occupational status is due to this difference in levels of educational attainment. Another part of the difference, however, is due to the fact that one unit increase in education produces an expected occupational status gain of .34 if the individual is a nonblack whereas one unit increase in education means a job only about .19 occupational points higher for a black. Education is more "efficacious" for nonblacks than for blacks.

An impression of how much of a difference in job status is due to the difference in values of background characteristics and how much is due to a difference in the efficacy of these characteristics can be obtained by supposing a hypothetical situation. Suppose, first, that a nonblack at the time of obtaining his first job had all the same characteristics of the average black. If we insert these values into the regression equation for nonblacks, then the expected occupational

status of this individual is predicted by the equation. However, this would be a higher occupational status than that predicted for the average black having identical background resources. The difference between these two results is an estimate of the greater efficacy of these resources for blacks than for nonblacks. The difference between the predicted status for this nonblack with average black background resources and the average nonblack is an estimate of the importance of differences in levels of resources held by blacks and nonblacks.

A similar hypothetical experiment could be carried out by assuming a black with background resources identical to those of the average nonblack. His predicted occupational status, using the equation for blacks, would be lower than that of the average nonblack. The difference is a second estimate of the greater efficacy of these resources for nonblacks, and the differences between this hypothetical black and the average black is a second estimate of the difference in job status due to different levels of resources.[16]

The equations given below, i.e., those reported in Table 5, can be used to perform these hypothetical experiments.[17]

	Status Constant	Education	Military	Father's Status	Father's Education	Mother's Education	Marriage	
Nonblack Equation	$Y = 12.53 + 3.42x_1 + 2.62x_2 + .079x_3 - .103x_4 + .188x_5 + 3.18x_6$							(2.1)
Black Equation	$Y = 15.12 + 1.87x_1 + 4.67x_2 + .098x_3 + .488x_4 - .314x_5 + .444x_6$							(2.2)

Table 6 summarizes the results obtained from performing these experiments. The two right-hand columns of the table show the contributions to job status among blacks (i.e., using the black equation) for individuals having characteristics of the average black and characteristics of the average nonblack. For example, column (5), for a black with the educational level of the average nonblack, education adds 7.35 points to his occupational status (compared to someone of zero education). If he were subject to the nonblack equation, however, the same education would increase his status by 13.44 points (see column (3). If a person has the education of the average black, and is subject to the black equation, then this education adds 5.72 (column (6)) job status points (again compared to zero education). But if he were nonblack, the same education would bring him 10.47 job status points (column (4)).

The two estimates of the proportion of the total difference in job status of the blacks and nonblacks that is due to different background characteristics, and the proportion due to different effects of these characteristics, are given below:

	Expected Occupational Status
Average nonblack characteristics, nonblack effects	29.89
Average black characteristics, nonblack effects	26.05
Average nonblack characteristics, black effects	26.91
Average black characteristics, black effects	24.30

The nonblack equation gives an estimate of 3.84 (29.89 - 26.05) and the

Table 6. Contributions to Expected Job Status for Blacks and Nonblacks Produced by Differences in Levels of Resources and Differences in Efficacy of Resources

Independent Variables, i	Mean Values, $\bar{X}_i$		Nonblack Equation ($b_w \bar{x}_i$)		Black Equation ($b_b \bar{x}_i$)	
	Nonblack	Black	Nonblack	Black	Nonblack	Black
	(1)	(2)	(3)	(4)	(5)	(6)
Educational Attainment	3.93	3.06	13.44	10.47	7.35	5.72
Military Service Before First Job	.142	.122	.37	.32	.66	.57
Father's Occupational Status	35.44	27.78	2.80	2.19	3.48	2.73
Father's Educational Attainment	2.28	1.53	-.23	-.16	1.11	.75
Mother's Educational Attainment	2.74	2.00	.52	.38	-.86	-.63
Marriage Before First Job	.145	.096	.46	.31	.06	.04
Constant			12.53	12.53	15.12	15.12
Predicted Status =			29.89	26.05	26.91	24.30

black equation an estimate of 2.61 (26.91 - 24.30) for the difference in status due to levels of background characteristics, giving an average of 3.23. The nonblack characteristics give an estimate of 2.98 (29.89 - 26.91) and the black characteristics an estimate of 1.75 (26.05 - 24.30) for the difference in status due to stronger overall efficacy of resources for nonblacks, for an average of 2.36. Thus, of the overall difference of 5.59 points in job status, these data indicate that 58% is due to differences in background characteristics when taking the first job, and 42% is due to differences in the efficacy of these background characteristics toward obtaining a higher-status job. Although it is not correct to attribute all of this 42% to discrimination in labor markets, the effects of such discrimination would show up as reduced efficacy of resources for blacks.[18]

3.0 Changes in Occupational Status from First Job to Job Ten Years Later

In the analysis, we find a correlation of .506 for nonblacks and .395 for blacks between status of first job and status of job held ten years later. Our question becomes, what are the various factors, both prior to first job and intervening in the ten year period, which move job status up or down from the initial status.

The first task in answering this question requires returning to the list of variables whose zero-order correlations with first job status were examined. A striking number of these variables have a larger zero-order correlation to second job for nonblacks, and a smaller one for blacks. Taking only the partial list used in the regression equations, from Table 5, the zero-order correlations can be seen in Table 7.

Correlations of job status to all three characteristics of one's family of orientation go up for nonblacks and down for blacks over the ten year period. This is a puzzling difference, but it is consistent with the general findings of the preceding section that most background resources, including education, have greater efficacy for first job status for nonblacks than for blacks. These resources also show a greater persistence of efficacy for nonblacks--a persistence which makes their overall effects (direct and indirect) increase with time, while those of the blacks decrease with time.

These zero-order correlations indicate that in examining the effect of intervening factors on later job status, it is wise to continue to include factors which precede the first job; their effects are not likely to operate completely through first job status.

Table 7. Zero-Order Correlations of Background Characteristics with Occupational Status of First Job and Occupational Status of Job Ten Years Later, for Nonblack and Black Men

Background Characteristics	Nonblack			Black		
	First Job	Later Job	Up or Down	First Job	Later Job	Up or Down
Educational Attainment	.512	.561	+	.398	.477	+
Military Service Before First Job	.130	.117	-	.253	.179	-
Father's Occupational Status	.242	.314	+	.237	.111	-
Father's Educational Attainment	.227	.244	+	.242	.199	-
Mother's Educational Attainment	.248	.283	+	.227	.202	-
Marriage Before First Job	.263	.276	+	.144	.230	+

Table 8 shows the overall change in job status over the ten year period.[19] The change for nonblacks is much greater than that for blacks, whether measured as absolute change (by which measurement it is over twice as great) or as percentage change (nearly twice as great). Thus one of the important differences between nonblacks and blacks which must be accounted for is the much greater growth in status of the nonblacks. Part of this may be attributable to the continual efficacy of background resources for nonblacks; part may be attributable to the differential effects of intervening factors.

3.1 Background Resources and Status of First Job

The first view of factors affecting later job status may be obtained by examining that status as a function of background factors, such as those used for first job status, but including as an explanatory factor the first job status itself. This will give some indication of the differential operation of those background factors for blacks and nonblacks. The effects which we will find, however, are not necessarily mutually exclusive with the effects of intervening factors, since the background resources may operate in part through the intervening events and activities that are not yet explicitly introduced.

Table 9 shows the regression coefficients and the t values for regression equations using the background resources shown in Table 5

Table 8. Mean Occupational Status of First Job After Last Full-Time Education and of Job Held Ten Years Later, for Nonblack and Black Men

	Nonblacks	Blacks	Difference
Status of First Job	29.89	24.30	5.59
Status of Later Job	39.10	28.15	10.95
Change	+ 9.21	+ 3.85	5.36
Percentage Change	+ 30.81%	+15.85%	

Table 9. Regression Coefficients and t-Values from Regression of Status of Later Job on Background Characteristics and Status of First Job

Independent Variables	Nonblack		Black	
	Regression Coefficent	t-value	Regression Coefficient	t-value
Occupational Status of First Job	.288	(7.7)	.284	(6.1)
Educational Attainment	2.91	(9.1)	2.49	(8.7)
Military Service Before First Job	1.37	(1.1)	.83	(0.7)
Father's Occupational Status	.133	(3.6)	-.041	(1.2)
Father's Educational Attainment	-.228	(0.9)	3.67	(1.5)
Marriage Before First Job	2.51	(2.0)	3.40	(2.5)
R^2=	.397		.290	

and used for first job , and first job status as independent variables.

Several inferences can be drawn from comparing these coefficients. First, family background, as represented by father's occupational status, is still quite important for job growth for nonblacks (a t-value of 3.7), but much less so for blacks (father's occupation and education have t-values of 1.2 and 1.5 respectively). Second, marriage before the first job appears beneficial to job status growth both for blacks and nonblacks, but more for the blacks, in contrast to its effect on first job status. But the major effects are in first job status and educational attainment. The regression coefficients for first job status are about the same for blacks and nonblacks, and quite low for each. If later job status were perfectly predictable from first job status, the coefficients would be 1.0,and in examining for our samples the coefficients for job status separated by only one year, they are in the range of .7 to .9. What these figures of .28 show is that there are great changes up and down, and thus low predictability, from first job status to status of the job held ten years later.

What is probably most striking is that educational attainment has not spent its effect on first job status, but continues to have an effect stronger than that of any other variable (as measured by the t-values) for both blacks and nonblacks. In contrast to the effect of education on first job status, its effect on growth in status is not much greater for nonblacks than for blacks (though, of course, the average educational level is higher for nonblacks than for blacks, as has

been seen earlier).

The total proportion of variance accounted for by these background factors and first job status is .397 for nonblacks and .290 for blacks; that is, multiple correlations of about .630 and .541 respectively. It will be useful later to examine what explanatory power is added by the intervening events and activities.

3.2 The Factors Intervening Between Status of First Job and Status of Later Job

A number of intervening factors were measured for the ten-year period following the first job. These can be divided roughly into four areas of life: further education, marital and family, residential movement, and occupational activity. In each of these areas, a number of factors were measured, with a great deal of redundancy. For example, a number of activities which occurred for some persons, but not all, and extended over variable lengths of time for those persons engaging in them, were measured in two ways: as a dichotomous variable for occurrence vs. non-occurrence, and according to the duration of the activity (in months), with zero duration for those who did not engage in the activity. Marriage is such a variable, as are unemployment, military service, and several others.

Because this analysis is a task of discovery rather than hypothesis-testing, as much exploration as possible was carried out in order to isolate those intervening events which showed consistent and strong relations to growth in occupational status. For example, the effects of several other intervening events and activities which fall outside these four spheres of activity were explored. One of these was number of illnesses which necessitated being off work for a month or longer; another was duration of time spent in jail during the ten-year period. But these variables were either too poorly represented in our sample, too poorly reported in the interviews, or not sufficiently important for growth in job status for their effects to show up in the analysis.

Although this exploration was not exhaustive, it was sufficiently comprehensive that no variable measured in the study with strong effects would be able to go unnoticed. Consequently, although the details of the analysis below might be subject to modification, the main conclusions would remain unchanged.

A list of intervening events and activities in the four spheres of life described above is shown in Table 10, which also presents their means and zero-order correlations with later job status.

Parenthetically, it should first be noted that the division of these events and activities into discrete spheres is to some degree arbitrary. On-the-job training is in both the educational and occupational sphere; military service, which appears in different form in both residential and occupational spheres, is related to both, but not wholly within either. Because of the impossibility of fitting activities neatly into these spheres, it is important to keep the content of each activity in mind.

This table shows that for both blacks and nonblacks, the zero-order correlations are greatest in the educational and marital spheres, with lower correlations in the residential and occupational spheres.

It shows also that the nonblack means are generally higher for those activities that are most highly correlated with later job status, suggesting that the nonblacks are involved in a generally greater number of job-status-increasing activities during the period after their first job. However, these can be only conjectures at this point, because all these

Table 10. Means of Events and Activities Intervening Between First Job and Job Ten Years Later and Zero-Order Correlations of These Variables with Status of Later Job

Events and Activities	Means		Zero-Order Correlations to Status of Later Job	
	Nonblack	Black	Nonblack	Black
Educational				
Duration of Part-Time Education, Months	9.61	4.43	.255	.263
Duration of On-the-Job Training, Months	13.16	7.26	.135	.151
Gain in Educational Attainment	.26	.14	.125	.146
Marital and Family				
Length of Time Married, Months	66.47	57.00	.243	.178
Length of Time Practiced Birth Control, Months	28.75	12.19	.264	.269
Number of Children Born in Ten Years	1.79	1.62	.109	-.029
Length of Time Wife Is in Labor Force, Months	15.36	16.45	.050	.240
Residential Movement				
Number of Locations Lived in Ten Years	3.35	2.38	-.023	.036
In Military or Not in Ten Years	.39	.28	-.125	.045
Move Between North and South, or South and North	.08	.19	.045	-.018
Occupational				
Total Duration of Part-Time Jobs, Months	4.64	5.00	.064	.136
Duration in Military, Months	11.65	9.04	-.089	.032
Total Duration of Unemployment, Months	1.26	2.19	-.108	-.006
Number of Jobs Held	5.07	4.14	-.035	.030

factors are related to other important variables, in particular to the first-job status, which is obviously a strong determinant of later job status.

The relative effects of these different spheres of activity can be determined in several ways. It is useful first to examine the relative effects of the spheres of activity as a whole, and then subsequently to examine the more specific effects of the different events and activities within each sphere.

The overall importance of these four spheres of activity--to the extent that each is represented by the variables listed in Table 10--can be assessed by examining the amount that each adds to the variance accounted for by background factors (.395 for nonblacks and .290 for blacks), when examined in conjunction with different combinations of variables representing other spheres of activity. Considering as a unit, each of the four sets of variables representing the different spheres, there are 16 such combinations, ranging from all absent to all present, which when added to the background factors examined earlier can account for different amounts of additional variance. Table 11 below shows the average additional variance accounted for by each of these sets of variables, for nonblacks and blacks. Because of the low correlation between the measured activities in these different spheres, the numbers in Table 11 are quite constant across the different combinations, varying only by one or two numbers in the third decimal.

Table 11

Average Additional Contributions to Explained Variance in Combination with Other Variable Sets, When Added to Variables in Table 9.

Variable Sets	Nonblack	Black
Education	.033	.028
Marital and family	.007	.012
Residential movement	.007	.001
Occupational	.010	.008

This table shows first the fact that educational activity constitutes both for blacks and nonblacks the most important of these intervening events. For nonblacks, the occupational sphere is second, while for blacks it is the marital and family sphere. This greater importance of the marital sphere for blacks' occupational status has been suggested by two results: first, the strong relation of first job status to wife's education, as shown in Table 4; and now in the greater contribution to explained variance by a set of marital and family variables. Still further evidence of the greater importance of variations in the family for blacks than for nonblacks can be seen from the relation between husband's and wife's job status. For blacks, this correlation (at time of later job) is .390; for whites, it is only .293.

A further idea of the relative importance of four spheres of activity --education, family, residence, and occupation--for job status can be seen

by examining the regression coefficients and the t-values for each variable when all variables are considered simultaneously, in Table 12. The absolute values of the regression coefficients cannot be compared across variables, because of the different scales for each variable. The same variable can, however, be compared for blacks and nonblacks; and the t-values allow a comparison of the relative importance of different variables.

Apart from the background variables, the one variable of most importance for both blacks and nonblacks is amount of part-time education. This variable has the highest t-value for both groups, and a coefficient of about the same size for both groups. For blacks, another educational variable, amount of on-the-job training, is next most important, while for nonblacks, length of time unemployed is next most important, with a negative effect as would be expected. For blacks, the two next most important are length of time practicing birth control, and number of children (negative), both independent measures of planning and constraint in family size. What is perhaps most striking is that the effects of these intervening events and activities are generally as great for blacks as for nonblacks, and in some cases greater, particularly in the sphere of educational activities. In all the previous examination, the efficacy of educational and related activity was less for blacks than for nonblacks; that is not so for the less formal education represented by part-time education and on-the-job training. Apart from educational variables, family planning and limitation of children are the most important for blacks and they too are more efficacious for blacks than for nonblacks.

Table 12. Regression Coefficients and t-Values from Regression of Status of Later Job on Events and Activities During Ten-Year Period in Educational, Marital, Residential and Occupational Spheres, and Including Background Characteristics

Independent Variable	Nonblack		Black	
	Regression Coefficient	t-value	Regression Coefficient	t-value
Educational				
Duration of part-time education	.096	(4.0)	.107	(2.9)
Duration of on-the-job training	.013	(0.8)	.045	(2.6)
Gain in educational attainment	1.76	(2.1)	1.11	(1.1)
Marital and Family				
Length of time married	.023	(1.4)	.011	(0.8)
Length of time practiced birth control	.0157	(1.3)	.032	(2.1)
Number of children born	-.540	(1.4)	-.646	(2.0)
Length of time in labor force	-.028	(1.9)	.005	(0.3)
Residential Movement				
Number of locations lived in during 10 years	-.235	(1.0)	.064	(0.2)
In military or not	-2.75	(1.8)	-.075	(0.0)
Move between North and South (either way)	2.96	(2.0)	.237	(0.2)
Occupational Activity				
Total duration of part-time jobs	.028	(1.0)	.031	(1.4)
Length of time in military	.060	(1.4)	-.028	(0.7)
Total length of unemployment	-.283	(2.7)	-.005	(0.1)
Number of jobs held	.331	(2.2)	.322	(1.8)
Background				
Status of first job	.300	(8.3)	.237	(5.0)
Educational attainment	2.66	(8.2)	2.20	(7.1)
Military service before first job	.231	(0.2)	.320	(0.3)
Father's occupational status	.119	(3.3)	-.051	(1.5)
Father's educational attainment	-.236	(1.0)	.344	(1.4)
Marriage before first job	1.17	(0.8)	2.67	(1.9)
R^2 =	.453		.339	

Comparing the effects of background variables for blacks and nonblacks, there are major differences in three sets of resources, all in the direction of greater efficacy of background resources for nonblacks. The three sets of resources are status of first job, educational attainment at end of full-time education, and father's occupational status. The combined effect of these three variables is to create a much more powerful carry-over effect of earlier resources on later job status for nonblacks than for blacks.

In comparing the relative benefits or losses deriving from the intervening events for blacks and nonblacks, it is useful to consider, as was done in examining first job status, the difference due to the different levels of these events and activities, and the differences due to their different efficacy. For example, Table 10 shows that the level of educational activity after first job was about twice as high for nonblacks as for blacks; but Table 12 , showing the regression coefficients for these three measures of educational activity, does not suggest any greater efficacy of these activities for nonblacks than for blacks (coefficients are higher for blacks in two of the three, for nonblacks in one).

It is possible to examine the amount of differences in later job status due to different levels of each of the variables (or clusters of variables), and the amount due to different efficacy of each of the variables or clusters of variables, by using the method discussed in the earlier section for first job status. The method is described more formally in Appendix B. The relevant equations are given below:

$$\Delta y(\text{levels}) = \tfrac{1}{2} \sum_{i=0}^{n} (b_{iw} + b_{ib})\ (\bar{x}_{iw} - \bar{x}_{ib}), \qquad \text{(B.3)}$$

$$\Delta y(\text{effects}) = \tfrac{1}{2} \sum_{i=0}^{n} (b_{iw} - b_{ib})\ (\bar{x}_{iw} + \bar{x}_{ib}). \qquad \text{(B.4)}$$

Where Δy (levels) is the difference in job status due to different levels of each of the variables, and Δy (effect) is the difference in job status due to the unequal efficacy of these variables. Use of the means of variables from Tables 4,8, and 10, and the regression coefficients from Table 12 in (B.3) gives:

Δy(levels) =	4.05	background
	0.87	intervening educational activities
	0.46	" marital and family events
	-0.42	" residential movement
	0.47	" occupational activity
	5.43	

Thus, the overall difference in later job status due to differences in levels of variables is 5.43. Only a small portion of this is due to intervening events. The effects of intervening residential movements are generally negative; consequently the higher mean values of nonblacks on two of these variables lead to a loss in job status relative to blacks. In the other spheres, the nonblacks generally showed higher levels of those activities that brought benefits and lower levels of those, like unemployment, that brought losses. The result is as shown in the above tabulation --a differential in job status due to higher levels of those resources most efficacious in bringing about increases in job status.

The other component of the difference in later job status, due to differential efficacy of various resources, may be found from the same data by use of equation (B.4). It is:

Δy (effects) =	6.66	background, including constant
	-0.28	intervening educational activities
	0.07	" marital and family events
	-1.39	" residential movement
	0.46	" occupational activity
	5.52	

Overall, then, the nonblacks have an average later job status 5.52 points higher than blacks due solely to greater efficacy of the same resources - whether due to discrimination or to other sources. However, that greater efficacy appears confined to the background factors, and does not extend to the intervening activities. For educational activities and for residential movement, the effects favor the blacks--but for different reasons. For the intervening educational activities, the efficacy of these activities is slightly greater for blacks. For residential movement, the effects are greater for nonblacks, but in the direction of status loss due to movement rather than gain. For blacks, as indicated earlier, there are only negligible effects of movement as measured here.[20]

Altogether, we can examine the components of status differences at first job and later job, and components of the differential growth in job status. Table 13 shows this.

Table 13. Differential Job Status of Nonblacks Over Blacks, for First Job, Job Ten Years Later, and for Gain in Job Status.

	First Job	Later Job	Gain
Due to different levels of resources and activities	3.23	5.43	1.80
Due to different efficacy of the same resources	2.36	5.52	3.16
Total	5.59	10.95	4.96

This table shows several things. First, the extra status of nonblacks at first job is due more to differential levels of resources among blacks and nonblacks than to differential efficacy of the resources (58% to 42%). For later job status, however, that ratio has altered from 58:42 to being an even division. This means that the extra gain in status from first job to later job by nonblacks is largely due to the greater efficacy of the same social characteristics. Examination of the details of the analysis would show that this is due primarily to one factor--father's occupational status, which for nonblacks exerts a continuing direct effect on gain in status, apart from its indirect effect through first job status and educational attainment, but there is no such continuing effect for blacks. The result is that the larger portion of the status gain in those ten years is due to different efficacy of the background resources. The differential gain is not due to different levels of background resources, nor is it due to different levels or different efficacy of intervening activities. In fact, the efficacy of intervening activities is greater overall for blacks than for nonblacks.

4.0 Summary and Conclusions

Individuals who start their occupational careers at the same point disperse over time, and end up at quite different levels. The purpose of the present investigation is to look at the mechanisms which lead to differential levels of success. The paper is based on retrospective life histories of a cohort of black men and a cohort of nonblack men, aged 30-39 in 1968. Included in the analysis are those men who have had at least ten years of occupational experience since last leaving full-time education. The measure of occupational achievement used throughout the analysis is the occupational status of the first job held after last leaving full-time education and the status of the job held ten years later.

The analysis shows that educational level far outweighs other characteristics of the respondent in determining the occupational status of his first job. The value of education, in terms of the status it brings, is about twice as great for nonblacks as for blacks. This lesser value of a unit of education for first job status is in part due to occupational discrimination. Whatever its cause, the difference in effects of education, coupled with the lower levels of education of blacks, results in considerably lower status levels, purely due to education.

The effects of other background characteristics, including parental background, are secondary in establishing initial occupational status. This does not exclude the possibility that parental background exercises a major indirect effect, through its effect on the educational level. However, its direct effects in establishing initial occupational status are not great.

Of the additional background characteristics measured prior to the first job, military experience has a positive effect, and considerably more effect on the status of blacks than on that of nonblacks.

In assessing the differential impact of levels of education and other background characteristics on initial occupational status, it is possible to determine the proportion of the overall difference in status level due to different levels of background resources and the proportion due to different efficacy of resources in establishing occupational status. Results indicate that 58% of the status difference between blacks and nonblacks is due to the different levels of background resources brought to the labor market, and 42% is due to differences in efficacy of these resources in producing high occupational status. The analysis of later job status shows that whereas the initial status difference between the two groups was 5.59 status units, it had widened to 10.95 units by the end of ten years. The status of nonblacks shows an overall percentage increase of 30.8%, that of blacks an overall increase of 15.9%.

The effect of background characteristics is not spent on the first job status but continues to be important for the later job status. In particular, education has a stronger effect on later job status than does any other characteristic, including status of first job. The increment in status gain between first and second job due to education is about the same for both groups. This contrasts to its much greater efficacy for nonblacks than blacks in first job status.

Four clusters of intervening events and experiences, selected from four different spheres of activities, and occurring in the ten-year interval between the first job and the later job were examined to see the extent to which they affect change in status. For both blacks and nonblacks, activities in the educational sphere were most important in incrementing status. For nonblacks, activities in the occupational sphere were second in importance and those in the marital and family sphere and the residential movement sphere about equal in importance. For blacks, events and experiences in the marital and family sphere were second in importance and events in the occupational sphere third. Residential movement was of minimal importance, if any, for blacks.

In determining (as with the status of the first job) the extent to which differences in status change are caused by differential <u>levels</u> of resources or the differential efficacy of these resources for blacks and nonblacks, we find that approximately half the difference in status change is due to original levels of resources and approximately half to the differential efficacy of the same resources and activities. In examining the effects of the intervening events, however, we find that the efficacy of these events (primarily part-time education and on-the-job training) is just as great for blacks as for nonblacks.

APPENDIX A

SUPPLEMENTARY TABLES

Table A.1 Age at Last Leaving Full-Time Education, for Total Nonblack Sample and Total Black Sample

Age (in Years)	Nonblack	Black
	Percent	
Before 14	3.9	6.9
14-15.9	11.3	18.7
16-17.9	31.7	34.2
18-19.9	23.0	25.5
20-21.9	7.7	7.5
22-23.9	6.3	2.7
24-25.9	6.9	1.9
26-27.9	4.1	0.6
28-29.9	2.4	0.7
30 and Over	3.0	1.5
	100.3	100.2
Total Cases	851	738

Table A.2 Mean Age at Last Leaving Full-Time Education by Educational Attainment Levels for Total Sample of Nonblack and Total Sample of Black Men

Educational Attainment	Nonblack			Black		
	Age (Years)			Age (Years)		
	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Less than four years of schooling	11.6	3.0	10	12.7	3.0	34
Elementary, four to eight years	15.1	1.3	117	15.3	1.5	148
High school, one to three years	16.9	1.4	165	17.2	1.8	256
High school graduate	18.3	1.4	301	18.5	1.8	201
College, one to three years	22.2	3.2	92	21.7	3.2	55
College, four years or more	25.5	3.3	159	25.0	4.4	42
Missing Information			7			2
Total cases			851			738

APPENDIX B

Technical Note

When analyzing regression equations for two (or more) groups, it is possible to separate out the proportion of the difference in dependent variables (in our case always occupational status) between the two groups due to different values of the independent variables and the proportion due to the different efficacy of the independent variables. By "efficacy" of an independent variable we mean the effect of the independent variable in changing the dependent variables, as expressed by regression coefficients of the independent variables. Consider, with our data, the nonblack average status of later job, 39.10 points, and the black average of the later job, 28.15 points. The difference between these two is 10.95 points. If we think of this 10.95 difference as the excess status of nonblack over blacks, then we can conceive of it broken into two additive parts: the excess status due to different <u>levels</u> of the independent variables (including both prior resources and intervening events); and the excess due to different efficacy of these variables in increasing job status. That is, $y_w - y_b = \Delta_{wb} y$ (= 10.95) and splitting $\Delta_{wb} y$ into two parts, gives $\Delta_{wb} y = \Delta y$ (levels) + Δy (effects). These two components may be found simply by operations on the two regression equations. First, subtracting the black equation from

the nonblack, and using $\bar{x}$ and $\bar{y}$ to represent mean values:

$$\bar{y}_w - \bar{y}_b = \sum_{i=0}^{n} b_{iw}\bar{x}_{iw} - \sum_{i=0}^{n} b_{ib}\bar{x}_{ib} \qquad \text{B.1}$$

where the initial value of y (first-job status) is relabelled x_i, and the constant term is included as variable 0, with $x_0 = 1$. In addition, when the regression is a lagged regression as here, let the indices on x_i be such that y at the earlier time (y_0 by previous notation) is labelled x_1. Addition of $\frac{1}{2}\sum b_{iw}(\bar{x}_{ib} - \bar{x}_{ib}) - \frac{1}{2}\sum b_{ib}(\bar{x}_{iw} - \bar{x}_{iw})$ to the equation, and factoring gives:

$$\bar{y}_w - \bar{y}_b = \Delta_{wb}\,\bar{y} = \tfrac{1}{2}\sum_{i=0}^{n}(b_{iw} + b_{ib})(\bar{x}_{iw} - \bar{x}_{ib}) + \tfrac{1}{2}\sum_{i=0}^{n}(b_{iw} - b_{ib})(\bar{x}_{iw} + \bar{x}_{ib}) \qquad \text{B.2}$$

or
$$\Delta y(\text{levels}) = \tfrac{1}{2}\sum_{i=0}^{n}(b_{iw} + b_{ib})(\bar{x}_{iw} - \bar{x}_{ib}), \qquad \text{B.3}$$

and
$$\Delta y(\text{effects}) = \tfrac{1}{2}\sum_{i=0}^{n}(b_{iw} - b_{ib})(\bar{x}_{iw} + \bar{x}_{ib}). \qquad \text{B.4}$$

Heuristically, each term of the first of these two components is the difference in average levels $(\bar{x}_{iw} - \bar{x}_{ib})$ times the average of the two regression coefficients $(b_{iw} + b_{ib})/2$. This corresponds to our intuitive notion of the differences in the dependent variable due to difference in average levels, since it is the difference in average levels multiplied by the average regression coefficient.

Each term of the second of the two components is merely the reverse of this: the difference in regression coefficients $(b_{iw} - b_{ib})$ times the average level of the variable, taken over the two groups $(x_{iw} + x_{ib})/2$. These terms, then, give the differences in the dependent variables due to differences in efficacy of the independent variables.

FOOTNOTES

[1]It should be noted that occupational status as a dimension of occupations has a number of unique attributes which justify its study. These orderings have been shown to be approximately invariant over time, invariant over subgroups of the population attributing ratings, invariant over the type of instructions given to raters, and invariant over respondents' interpretation of "prestige" or "social standing." (See, for example, Hodge, Siegel and Rossi, 1966.) Also, there is extremely high correspondence between the rank orderings of occupations in the United States and in cross-cultural comparisons (Hodge, Treiman and Rossi, 1966).

While quantitative studies of the status of occupations have existed for over forty years, ratings have generally been available for only a small number of occupational titles. Only recently, as a result of studies conducted by the National Opinion Research Center, have ratings been available for all Census occupational titles. The present analysis uses the prestige scores from those studies (Rossi, Hodge and Siegel, 1970 [forthcoming]). In the text itself, "occupational status," "job status," and simply "status" are used interchangeably.

[2]Duncan reports the correlation between occupational status of first job and status at the time of interview in 1962 as .526 for native nonblack men between 25 and 64 years of age and .329 for native black men, 25 -64 years of age (Duncan, Featherman, and Duncan, 1968).

[3]The precise wording of the question asked in their study is as follows: "Please think about the first full-time job you had after you left school. (Do not count part-time jobs or jobs held during school vacation. Do not count military service.) How old were you when you began this job?"

[4]The universe of the two samples of this study are the total populations of black and nonblack males 30-39 years of age, in 1968, residing in households in the United States. Individuals in the sample were selected by standard multi-state area probability methods. The execution of the sample design consisted of two parts: (A) A national sample, designed to yield the required number of nonblack eligibles plus a number of eligible blacks proportional to their representation in the population as a whole; and (B) A supplementary selection of black households only, designed to supply the additional eligible blacks required to satisfy the design. The black sample

consists of blacks interviewed in the National sample and the blacks interviewed in the supplementary sample. Only individuals normally classified by the Census as Negroes are included in what we are calling the black sample. In each sample, selection was made so that each person in the universe had an equal probability of being interviewed. The analysis is based on 1589 cases: 738 blacks and 851 nonblacks. The overall completion rate for the study was 76.1% for Sample A and 78.2% for Sample B. For further details, see Blum et al, 1969.

[5]If the oldest respondent was working at age 14, i.e., in 1943, and in the labor-force continuously, 1968 could be a time-point twenty-five years after entry into the labor force. At the other extreme, for the respondent who was born in 1938, i.e., the youngest in the study, and completed his university training at age 27 in 1965, this time-point would be only three years after entry.

[6]Tables based on only the cases analyzed in this report. For the characteristics of the total sample, see Appendix A.

[7]This can easily be seen by considering the equations for a specific respondent labelled j with y_1 as dependent variable.

$$y_{ij} = a + b_0 y_0 + \Sigma b_i x_{ij} + \varepsilon_j$$

and with $y_1 - y_0$, or Δy as dependent variable:

$$y_{ij} - y_{0j} = a + (b_0 - 1) y_{0j} + \Sigma b_i x_{ij} + \varepsilon_j$$

The second equation may be obtained from the first, merely by subtracting y_{0j} from both sides, leaving the coefficients unchanged, except for the coefficients on y_0, which change from b_0 to $b_0 - 1$.

[8]Education, both for the respondents, wives and parents was scored in the following way:

0: Less than four years of schooling
1: Elementary, four to seven years
2: Elementary, eight years
3: High school, one to three years
4: High school graduate
5: Post-high school, vocational, etc.
6: College, one to three years

7: Bachelor's degree or four years college

8: College, five years or more

Category 5 was used only if the respondent, or his parents, had previously completed high school.

[9]The correlations between respondent's education and wife's education are .539 for blacks and .491 for nonblacks at first job, and .593 for blacks to .581 for nonblacks ten years later.

[10]The higher correlation could also be produced by higher homogamy among blacks than among nonblacks.

[11]It is not true that small zero-order relationships imply small partial regression coefficients. Relationships to other variables might produce a small zero-order relation in the presence of a strong effect. For this reason, the deleted variables were examined in a regression equation along with the other variables. With one exception, this failed to show partial relationships that were significant at the 5% level. The exception was number of illnesses prior to first job for blacks,which showed a significant positive relationship to occupational status. This variable was deleted in further analysis because the result could not be accounted for,and it was assumed that this variable was acting as a surrogate for another, unmeasured variable. For the nonblacks, a very slight insignificant negative relation was found.

[12]Of the black respondents in this analysis, 31.1% were in the North and 68.9% in the South when they obtained their first full-time job after leaving full-time education. Of nonblack respondents, 73.3% were in the North and 26.7% in the South.

[13]The latter difference would be primarily reflected in differential wages, and not in differentials in occupational status.

[14]Such an analysis would show a strong effect of mother's education on educational attainment, and thus a strong indirect effect on occupational status. The zero-order correlation between educational attainment and mother's education for nonblacks is .429 and for blacks .360. For blacks, this is the strongest determinant, of all the variables measured in this study, of son's educational attainment at time of last leaving full-time education.

[15]See footnote 8 for the scaling of educational attainment.

[16]For a mathematical formulation of the above discussion, see Appendix B.

[17]See variables in Table 5 for wording of these abbreviations.

[18]Duncan has used a similar approach with income (using only the nonblack equation), and has attributed the residual difference unexplainable by differences in background characteristics, todiscrimination in the labor market. His residual unexplained income is about 38% of the total income difference between the average black and the average nonblack. (See Toward a Social Report,1969.)

[19]It should be noted that only those persons are included in the analysis of this paper who have a job status at the beginning and end of the period. This has the effect of somewhat underrepresenting those whose first job was at a later age, and who would thus have higher status on the average. It does insure, however, that the longitudinal aspects of the analysis are preserved: averages taken at the first and terminal jobs are averages over exactly the same persons. These differences in averages can be correctly described as "average change" over the period.

[20]Because the effects of residential mobility are being examined in another report with more specific and differentiated measures, the present analysis will not attempt to give conclusive results for this sphere of activity.

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